Draft for Review

November 24, 2015 Reference No. 038443-62

Mr. Timothy D. Hoffman
Dinsmore & Shohl
Fifth Third Center
1 S. Main St. Suite 1300
Dayton, Ohio
45402

Mr. Jeff Pedro – Tenant
SIM Trainer
2031 Dryden Road
Moraine, Ohio
45439

Dear Messrs. Hoffman and Pedro:

Re: Summary of Vapor Intrusion Sampling Results
SIM Trainer – Building 15
South Dayton Dump and Landfill Site, Moraine, Ohio

GHD (formerly Conestoga-Rovers & Associates [CRA]) prepared this letter to inform you of the results of the vapor intrusion (VI) sampling completed at your property from 2012 to 2015. Sub-slab (SS, space under your building floor) and indoor air (IA) samples were collected in 2012 as part of the VI investigation at the South Dayton Dump and Landfill (SDDL) Site, and from 2013 to 2015 to evaluate the performance of the installed sub-slab depressurization system (SSDS).The sample locations within SIM Trainer (designated as Building 15) are presented on Figure 1. GHD is conducting this work on behalf of the companies that have responded to United States Environmental Protection Agency (USEPA) requests for Site investigation and VI studies (Respondents). Oversight is being performed by USEPA.

VI is the migration of volatile chemicals from the subsurface into overlying buildings. VI is a potential concern at any building, existing or planned, located near soil, groundwater, or soil vapor containing solvent- or petroleum-related compounds that may volatilize or chemicals that are combustible.

GHD collected SS and IA samples to determine if solvent- or petroleum-based compounds are present in soil vapor beneath the foundation and in IA within the buildings at levels which exceed SS and/or IA screening levels, as established by the Ohio Department of Health (ODH) in 2012.

The ODH has recommended the screening levels for SS and IA samples. The 2012 screening levels represent concentrations of substances that are unlikely to cause harmful (adverse) health effects in exposed people, based on residential exposure. Detections in IA below these levels are not a health concern. The SS screening levels are calculated based on an attenuation factor (AF) to account for the mixing and ventilation that occurs when vapors enter the indoor air space[1]. In November 2015,

[1] The 2012 ODH Screening levels were calculated based on an AF of 10, reflective of 2002 USEPA guidance. USEPA revised and issued final VI guidance in 2015 which utilizes an AF of 33 for residential buildings; see

GHD Services Inc.
9033 Meridian Way West Chester Ohio 45069 USA
T 513 942 4750 **F** 513 942 8585 **W** www.ghd.com

USEPA proposed to supplement ODH SS screening levels for the industrial buildings with SSDSs at the Site with SS values based on an AF of 33, to reflect current VI guidance for residential buildings [screening levels calculated based on an AF of 33 are referred to as ODH SS screening levels (AF=33)]. GHD collected and submitted samples to TestAmerica Inc. GHD received and validated the results of the laboratory analysis. A copy of the validated analytical results compared to the ODH screening levels (AF=10) can be found in Table 1.

Compounds detected at concentrations greater than the ODH SS screening levels (AF=10; AF=33) and ODH IA screening levels from SS and IA samples are presented below. All of the samples are reported in units of parts per billion by volume (ppbv). Figure 1 presents the history of exceedances at Building 15 sample locations.

Table A Summary of Building 15 Sampling Results for SIM Trainer

Location	Sample Type	Sampling Date	Parameter	Detected Concentration (ppbv)	ODH IA Screening Level (AF=10) (ppbv)	ODH SS Screening Levels (AF = 10; AF=33) (ppbv)
Building 15						
SS-15-A	Sub-slab	01/11/2012	Trichloroethylene (TCE)	400	Not Applicable	20; 66
		03/13/2012		390		
SS-15-B	Sub-Slab	01/12/2012	TCE	690	Not Applicable	20; 66
		03/13/2012		680		
SS-15-C	Sub-Slab	01/12/2012	Benzene Cis-1,2-DCE TCE Vinyl chloride	230 7,400 95 1,100	Not Applicable	20; 66 370;1,221 20; 66 20; 66
		03/13/2012	Benzene Cis-1,2-DCE TCE Vinyl chloride Methane	320 10,000 120 1,700 0.97%	Not Applicable	20; 66 370;1,221 20; 66 20; 66 0.5%
		02/13/2014	Benzene Cis-1,2-DCE TCE Vinyl chloride	36 1,700 25 350	Not Applicable	20; 66 370;1,221 20; 66 20; 66
		04/24/2014	Benzene Cis-1,2-DCE TCE Vinyl chloride	60 / 62 2,200 / 2,300 61 / 63 99 / 97	Not Applicable	20; 66 370;1,221 20; 66 20; 66

"OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Source to Indoor Air (USEPA, June 2015) (Final Vapor Intrusion Guidance)".

Table A Summary of Building 15 Sampling Results for SIM Trainer

Location	Sample Type	Sampling Date	Parameter	Detected Concentration (ppbv)	ODH IA Screening Level (AF=10) (ppbv)	ODH SS Screening Levels (AF = 10; AF=33) (ppbv)
		07/14/2015	Cis-1,2-DCE TCE Vinyl chloride	780 87 26	Not Applicable	370;1,221 20; 66 20; 66
IA-15-A	Indoor Air	03/13/2012	TCE	5.2	2	Not Applicable
		04/24/2014		3.0		
IA-15-C	Indoor Air	03/13/2012	Tetrachloroethene	120	250	Not Applicable

Notes:

cis-1,2-DCE – cis-1,2-Dichloroethene
Value / Value – Result / Duplicate Result

What do these results mean?

The 2012 TCE SS sample and IA results were greater than the ODH screening levels. These results showed that at the time of each sampling event in 2012, VI was occurring in Building 15.

In 2012, tetrachloroethene (PCE) and TCE were the only parameters detected in Building 15 indoor air at concentrations greater than the ODH IA screening levels. PCE was not detected in the co-located SS soil vapor sample, indicating that the IA PCE concentration was not due to VI. Following the installation of the SSDS in January 2014, only TCE was detected at a concentration greater than the ODH IA screening level. The IA exceedance for TCE occurred at only one sampling location (IA-15-A) and was inconsistent with 2015 sampling event results in which no indoor air TCE exceedances were present.

In 2012, benzene, cis-1,2-DCE, TCE, vinyl chloride, and methane were detected in Building 15 SS soil vapor at concentrations greater than the ODH screening levels. Following the installation of the SSDS, SS exceedances were present in sample results collected from only one SS probe (SS-15-C). The July 2015 TCE SS concentrations at SS-15-C were marginally greater than the ODH SS screening level (AF=33).

Conclusion

The 2015 sampling results show that IA concentrations are less than the 2012 ODH IA screening levels, and SS concentrations are less than the ODH SS screening levels (AF=33), with the exception of the July 2015 TCE concentration at SS-15-C.

Recommendations

As presented on Figure 1, USEPA and GHD propose to install one additional stemline (EP-2 Stem line 1) in the vicinity of SS-15-C in order to further address the TCE exceedances at that location. GHD will also install valves at all extraction points, where possible, to control and reduce the amount of vacuum applied to the sub-slab. GHD notes that it may not be feasible to install valves at all suction points due to the existing system configuration. GHD will collect samples 60 days following the proposed system modifications to verify that the SSDS is operating to reduce concentrations to less than applicable criteria.

GHD will complete quarterly checks of the SSDS and collect SS and IA samples annually to ensure acceptable system operation conditions.

We would like to discuss the information and recommendations provided in this letter with you and will be in contact to make arrangements for a meeting.

Thank you for your cooperation. If you have questions related to the sampling or on-going site investigation, please do not hesitate to contact the undersigned.

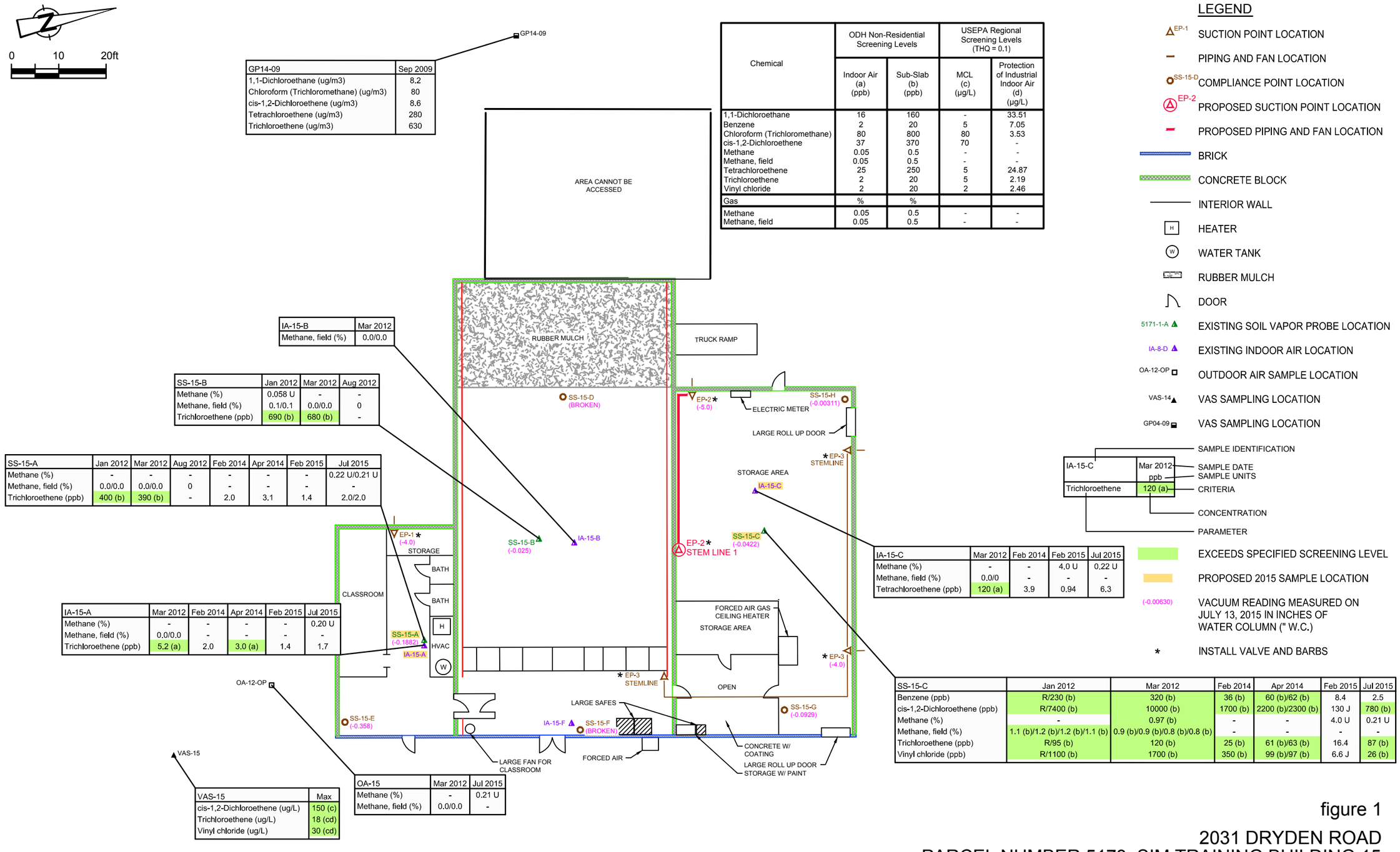
GHD Services Inc.

Julian Hayward, P. Eng.

VC/cb/1

Encl.

cc: Steve Renninger - U.S. EPA Removal Program Manager
Leslie Patterson – U.S. EPA Remedial Program Manager
Jenny Davison – U.S. EPA Remedial Program Manager
Maddie Adams – Ohio EPA, Site Coordinator
Julian Hayward - GHD



GP14-09	Sep 2009
1,1-Dichloroethane (ug/m3)	8.2
Chloroform (Trichloromethane) (ug/m3)	80
cis-1,2-Dichloroethene (ug/m3)	8.6
Tetrachloroethene (ug/m3)	280
Trichloroethene (ug/m3)	630

Chemical	ODH Non-Residential Screening Levels		USEPA Regional Screening Levels (THQ = 0.1)	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)	MCL (c) (µg/L)	Protection of Industrial Indoor Air (d) (µg/L)
1,1-Dichloroethane	16	160	-	33.51
Benzene	2	20	5	7.05
Chloroform (Trichloromethane)	80	800	80	3.53
cis-1,2-Dichloroethene	37	370	70	-
Methane	0.05	0.5	-	-
Methane, field	0.05	0.5	-	-
Tetrachloroethene	25	250	5	24.87
Trichloroethene	2	20	5	2.19
Vinyl chloride	2	20	2	2.46
Gas	%	%		
Methane	0.05	0.5	-	-
Methane, field	0.05	0.5	-	-

IA-15-B	Mar 2012
Methane, field (%)	0.0/0.0

SS-15-B	Jan 2012	Mar 2012	Aug 2012
Methane (%)	0.058 U	-	-
Methane, field (%)	0.1/0.1	0.0/0.0	0
Trichloroethene (ppb)	690 (b)	680 (b)	-

SS-15-A	Jan 2012	Mar 2012	Aug 2012	Feb 2014	Apr 2014	Feb 2015	Jul 2015
Methane (%)	-	-	-	-	-	-	0.22 U/0.21 U
Methane, field (%)	0.0/0.0	0.0/0.0	0	-	-	-	-
Trichloroethene (ppb)	400 (b)	390 (b)	-	2.0	3.1	1.4	2.0/2.0

IA-15-A	Mar 2012	Feb 2014	Apr 2014	Feb 2015	Jul 2015
Methane (%)	-	-	-	-	0.20 U
Methane, field (%)	0.0/0.0	-	-	-	-
Trichloroethene (ppb)	5.2 (a)	2.0	3.0 (a)	1.4	1.7

OA-15	Mar 2012	Jul 2015
Methane (%)	-	0.21 U
Methane, field (%)	0.0/0.0	-

VAS-15	Max
cis-1,2-Dichloroethene (ug/L)	150 (c)
Trichloroethene (ug/L)	18 (cd)
Vinyl chloride (ug/L)	30 (cd)

IA-15-C	Mar 2012	Feb 2014	Feb 2015	Jul 2015
Methane (%)	-	-	4.0 U	0.22 U
Methane, field (%)	0.0/0	-	-	-
Tetrachloroethene (ppb)	120 (a)	3.9	0.94	6.3

SS-15-C	Jan 2012	Mar 2012	Feb 2014	Apr 2014	Feb 2015	Jul 2015
Benzene (ppb)	R/230 (b)	320 (b)	36 (b)	60 (b)/62 (b)	8.4	2.5
cis-1,2-Dichloroethene (ppb)	R/7400 (b)	10000 (b)	1700 (b)	2200 (b)/2300 (b)	130 J	780 (b)
Methane (%)	-	0.97 (b)	-	-	4.0 U	0.21 U
Methane, field (%)	1.1 (b)/1.2 (b)/1.2 (b)/1.1 (b)	0.9 (b)/0.9 (b)/0.8 (b)/0.8 (b)	-	-	-	-
Trichloroethene (ppb)	R/95 (b)	120 (b)	25 (b)	61 (b)/63 (b)	16.4	87 (b)
Vinyl chloride (ppb)	R/1100 (b)	1700 (b)	350 (b)	99 (b)/97 (b)	6.6 J	26 (b)

LEGEND

- EP-1 — SUCTION POINT LOCATION
- PIPING AND FAN LOCATION
- SS-15-D — COMPLIANCE POINT LOCATION
- EP-2 — PROPOSED SUCTION POINT LOCATION
- PROPOSED PIPING AND FAN LOCATION
- BRICK
- CONCRETE BLOCK
- INTERIOR WALL
- H — HEATER
- W — WATER TANK
- RUBBER MULCH
- DOOR
- 5171-1-A — EXISTING SOIL VAPOR PROBE LOCATION
- IA-8-D — EXISTING INDOOR AIR LOCATION
- OA-12-OP — OUTDOOR AIR SAMPLE LOCATION
- VAS-14 — VAS SAMPLING LOCATION
- GP04-09 — VAS SAMPLING LOCATION

IA-15-C	Mar 2012
Trichloroethene	120 (a)

- SAMPLE IDENTIFICATION
- SAMPLE DATE
- SAMPLE UNITS (ppb)
- CRITERIA (120 (a))
- CONCENTRATION
- PARAMETER

- EXCEEDS SPECIFIED SCREENING LEVEL
- PROPOSED 2015 SAMPLE LOCATION
- (-0.00630) — VACUUM READING MEASURED ON JULY 13, 2015 IN INCHES OF WATER COLUMN (" W.C.)
- * — INSTALL VALVE AND BARBS

figure 1

2031 DRYDEN ROAD
PARCEL NUMBER 5173, SIM TRAINING BUILDING 15
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

GHD

Table 1

Summary Of Building 15 - Sim Trainer VI Analytical Results
South Dayton Dump And Landfill Site
Moraine, Ohio
2012-2015

Sample Location: / Sample Date: / Parameters	ODH Non-Residential Screening Levels		ODH Non-Residential Action Levels		IA-15-A 3/13/2012	IA-15-A 2/11/2014	IA-15-A 4/24/2014	IA-15-A 2/18/2015	IA-15-A 7/14/2015	IA-15-B 3/13/2012	IA-15-C 3/13/2012	IA-15-C 2/13/2014
	Sub-Slab Soil Gas a	Indoor Air c	Sub-Slab Soil Gas b	Indoor Air d								
Volatile Organic Compounds												
1,1-Dichloroethane	160	16	1600	160	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.10 U	0.026 U
Benzene	20	2	200	20	0.46	0.29	0.23	0.23	0.16 J	0.51	0.51 J	0.63
Chloroform (Trichloromethane)	800	80	8000	800	0.077 J	0.038 U	0.050 J	0.038 U	0.079 J	0.038 U	0.15 U	0.038 U
cis-1,2-Dichloroethene	370	37	3700	370	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.24 U	0.060 U
Ethylbenzene	2500	250	25000	2500	0.15 J	0.13 J	0.15 J	0.068 U	0.11 J	0.12 J	0.43 J	0.39
m&p-Xylenes	2000	200	20000	2000	0.52	0.44	0.40	0.12 U	0.36	0.43	1.6	1.5
Naphthalene	29	2.9	-	-	0.25 J	0.090 U	0.090 U	0.090 U	0.13 J	0.090 U	0.36 U	0.090 U
o-Xylene	2000	200	20000	2000	0.21	0.17 J	0.20	0.061 U	0.15 J	0.17 J	0.62 J	0.46
Tetrachloroethene	250	25	2500	250	0.84	2.3	2.8	1.3	1.6	1.4	120[c]	3.9
Trichloroethene	20	2	200	20	5.2[c]	2.0	3.0[c]	1.4	1.7	0.13 J	1.6	0.59
Vinyl chloride	20	2	200	20	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.28 U	0.071 U
Gases												
Methane	0.5	0.05	5	0.5	-	-	-	-	0.20 U	-	-	-
Radiology												
Radon-222	-	-	-	-	-	-	-	-	0.13 +/-0.05	-	-	-

Notes:

All units are in parts per billion by volume (ppbv)
J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Table 1

Summary Of Building 15 - Sim Trainer VI Analytical Results
South Dayton Dump And Landfill Site
Moraine, Ohio
2012-2015

Sample Location:					IA-15-C	IA-15-C	IA-15-C	IA-15-F	IA-15-F	IA-15-H	OA-15	OA-15
Sample Date:					2/18/2015	2/18/2015	7/14/2015	2/11/2014	4/24/2014	4/24/2014	3/13/2012	2/11/2014
	ODH Non-Residential Screening Levels		ODH Non-Residential Action Levels									
Parameters	Sub-Slab Soil Gas	Indoor Air	Sub-Slab Soil Gas	Indoor Air								
	a	c	b	d								
Volatile Organic Compounds												
1,1-Dichloroethane	160	16	1600	160	0.026 U	0.24 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U
Benzene	20	2	200	20	0.22	0.28	0.68	0.25	0.20	1.2	0.068 J	0.18 J
Chloroform (Trichloromethane)	800	80	8000	800	0.038 U	0.12 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U
cis-1,2-Dichloroethene	370	37	3700	370	0.060 U	0.62 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U
Ethylbenzene	2500	250	25000	2500	0.17 J	0.25 U	1.2	0.068 U	0.076 J	1.4	0.068 U	0.068 U
m&p-Xylenes	2000	200	20000	2000	0.62	0.72	5.4	0.22	0.27	5.3	0.12 U	0.19 J
Naphthalene	29	2.9	-	-	0.090 U	0.64 U	0.41 J	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
o-Xylene	2000	200	20000	2000	0.20	0.27	2.1	0.074 J	0.10 J	1.8	0.061 U	0.062 J
Tetrachloroethene	250	25	2500	250	0.59	0.94	6.3	0.45	0.053 J	2.9	0.040 U	0.040 U
Trichloroethene	20	2	200	20	0.20	0.37	1.2	0.076 J	0.036 U	0.75	0.036 U	0.036 U
Vinyl chloride	20	2	200	20	0.071 U	0.13 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
Gases												
Methane	0.5	0.05	5	0.5	-	-	0.22 U	-	-	-	-	-
Radiology												
Radon-222	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

All units are in parts per billion by volume (ppbv)
J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Table 1

Summary Of Building 15 - Sim Trainer VI Analytical Results
South Dayton Dump And Landfill Site
Moraine, Ohio
2012-2015

Sample Location: / Sample Date: / Parameters	ODH Non-Residential Screening Levels		ODH Non-Residential Action Levels		OA-15 4/24/2014	OA-15 2/18/2015	OA-15 7/14/2015	SS-15-A 1/12/2012	SS-15-A 3/13/2012	SS-15-A 2/11/2014	SS-15-A 4/24/2014	SS-15-A 2/18/2015
	Sub-Slab Soil Gas a	Indoor Air c	Sub-Slab Soil Gas b	Indoor Air d								
Volatile Organic Compounds												
1,1-Dichloroethane	160	16	1600	160	0.026 U	0.026 U	0.026 U	0.60 U	0.93 U	0.026 U	0.026 U	0.41
Benzene	20	2	200	20	0.16 J	0.18 J	0.15 J	0.31 U	2.0 U	0.31	0.11 J	0.23
Chloroform (Trichloromethane)	800	80	8000	800	0.038 U	0.038 U	0.038 U	0.53 U	1.4 U	0.038 U	0.045 J	0.038 U
cis-1,2-Dichloroethene	370	37	3700	370	0.060 U	0.060 U	0.060 U	2.7 J	2.1 U	0.10 J	0.060 U	0.060 U
Ethylbenzene	2500	250	25000	2500	0.073 J	0.068 U	0.080 J	0.38 U	2.4 U	0.22	0.068 U	0.47
m&p-Xylenes	2000	200	20000	2000	0.23	0.12 U	0.26	0.82 U	4.3 U	0.51	0.12 U	2.2
Naphthalene	29	2.9	-	-	0.090 U	0.090 U	0.090 UJ	1.5 U	3.2 U	0.090 U	0.090 U	0.55
o-Xylene	2000	200	20000	2000	0.088 J	0.061 U	0.086 J	0.38 U	2.2 U	0.44	0.061 U	0.79
Tetrachloroethene	250	25	2500	250	0.040 U	0.040 U	0.040 U	7.6	7.1	1.5	1.2	0.83
Trichloroethene	20	2	200	20	0.036 U	0.096 J	0.036 U	**400[ab]**	**390[ab]**	2.0	3.1	1.4
Vinyl chloride	20	2	200	20	0.071 U	0.071 U	0.071 U	0.50 U	2.5 U	0.071 U	0.071 U	0.071 U
Gases												
Methane	0.5	0.05	5	0.5	-	-	0.21 U	-	-	-	-	-
Radiology												
Radon-222	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

All units are in parts per billion by volume (ppbv)
J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Table 1

Summary Of Building 15 - Sim Trainer VI Analytical Results
South Dayton Dump And Landfill Site
Moraine, Ohio
2012-2015

Sample Location: / Sample Date: / Parameters	ODH Non-Residential Screening Levels: Sub-Slab Soil Gas a	ODH Non-Residential Screening Levels: Indoor Air c	ODH Non-Residential Action Levels: Sub-Slab Soil Gas b	ODH Non-Residential Action Levels: Indoor Air d	SS-15-A 7/14/2015	SS-15-A 7/14/2015 Duplicate	SS-15-B 1/12/2012	SS-15-B 3/13/2012	SS-15-C 1/12/2012	SS-15-C 1/12/2012 Duplicate	SS-15-C 3/13/2012	SS-15-C 2/13/2014
Volatile Organic Compounds												
1,1-Dichloroethane	160	16	1600	160	0.026 U	0.026 U	1.1 U	1.2 U	R	8.8 U	14 U	2.8 U
Benzene	20	2	200	20	0.12 J	0.12 J	0.55 U	2.6 U	R	**230[ab]**	**320[ab]**	**36[a]**
Chloroform (Trichloromethane)	800	80	8000	800	0.065 J	0.060 J	8.5	12	R	7.8 U	20 U	4.1 U
cis-1,2-Dichloroethene	370	37	3700	370	0.060 U	0.060 U	86	130	R	**7400[ab]**	**10000[ab]**	**1700[a]**
Ethylbenzene	2500	250	25000	2500	0.068 U	0.068 U	0.67 U	3.2 U	R	320	540	70
m&p-Xylenes	2000	200	20000	2000	0.19 J	0.18 J	1.5 U	5.6 U	R	820	1300	130
Naphthalene	29	2.9	-	-	0.097 J	0.090 UJ	2.6 U	4.2 U	R	22 U	47 U	9.7 U
o-Xylene	2000	200	20000	2000	0.070 J	0.061 U	0.67 U	2.9 U	R	710	1100	170
Tetrachloroethene	250	25	2500	250	2.4	2.4	1.3 J	2.5 J	R	2.8 U	21 U	4.3 U
Trichloroethene	20	2	200	20	2.0	2.0	**690[ab]**	**680[ab]**	R	**95[a]**	**120[a]**	**25[a]**
Vinyl chloride	20	2	200	20	0.071 U	0.071 U	0.88 U	3.3 U	R	**1100[ab]**	**1700[ab]**	**350[ab]**
Gases												
Methane	0.5	0.05	5	0.5	0.22 U	0.21 U	-	-	-	-	**0.97[a]**	-
Radiology												
Radon-222	-	-	-	-	3.5 +/-0.3	-	-	-	-	-	-	-

Notes:

All units are in parts per billion by volume (ppbv)
J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Table 1

Summary Of Building 15 - Sim Trainer VI Analytical Results
South Dayton Dump And Landfill Site
Moraine, Ohio
2012-2015

Sample Location:					SS-15-C	SS-15-C	SS-15-C	SS-15-C	SS-15-C
Sample Date:					4/24/2014	4/24/2014 Duplicate	2/18/2015	2/18/2015	7/14/2015
	ODH Non-Residential Screening Levels		ODH Non-Residential Action Levels						
Parameters	**Sub-Slab Soil Gas a**	**Indoor Air c**	**Sub-Slab Soil Gas b**	**Indoor Air d**					
Volatile Organic Compounds									
1,1-Dichloroethane	160	16	1600	160	3.0 U	3.1 U	0.27 U	0.10 U	0.28 U
Benzene	20	2	200	20	**60[a]**	**62[a]**	8.4	5.9 J	2.5
Chloroform (Trichloromethane)	800	80	8000	800	4.4 U	4.6 U	0.13 U	0.15 U	0.71 J
cis-1,2-Dichloroethene	370	37	3700	370	**2200[a]**	**2300[a]**	125	130 J	**780[a]**
Ethylbenzene	2500	250	25000	2500	180	180	8.5	5.8 J	0.78 J
m&p-Xylenes	2000	200	20000	2000	410	410	6	4.0 J	1.3 U
Naphthalene	29	2.9	-	-	10 U	11 U	0.68 U	0.36 U	0.95 UJ
o-Xylene	2000	200	20000	2000	400	400	34	33 J	3.1
Tetrachloroethene	250	25	2500	250	4.6 U	4.8 U	3.2	2.5 J	28
Trichloroethene	20	2	200	20	**61[a]**	**63[a]**	16.4	12 J	**87[a]**
Vinyl chloride	20	2	200	20	**99[a]**	**97[a]**	0.13 U	6.6 J	**26[a]**
Gases									
Methane	0.5	0.05	5	0.5	-	-	-	-	0.21 U
Radiology									
Radon-222	-	-	-	-	-	-	-	-	-

Notes:

All units are in parts per billion by volume (ppbv)
J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.